

**Chronology of Events Associated with the Manteo (Shallowbag) Bay Project,  
Dare County, North Carolina  
1963 - 2001**

**Acronyms, Abbreviations, and Special Terms**

ASA(CW) = Assistant Secretary of the Army (Civil Works)	GDM = General Design Memorandum
A/S-FW = Assistant Secretary of the Interior for Fish and Wildlife and Parks	NCDOT = North Carolina Department of Transportation
BO = Biological Opinion	NMFS = National Marine Fisheries Service
CAC = Coastal Advisory Committee, also known as the Inman Panel	NPS = National Park Service
CEQ = Council on Environmental Quality	OITDC = Oregon Inlet Technical Design Committee
CHNS = Cape Hatteras National Seashore	OITOC = Oregon Inlet Technical Observation Committee
COE = U. S. Army Corps of Engineers	OMB = Office of Management and Budget
DOI = U. S. Department of the Interior	PINWR = Pea Island National Wildlife Refuge
EIS = Environmental Impact Statement	PN = Public Notice
EPA = U. S. Environmental Protection Agency	project = Manteo (Shallowbag) Bay Project [the jetties at Oregon Inlet], Dare County, North Carolina
FDM = Feature Design Memorandum	RD = Regional Director
FWS = U. S. Fish and Wildlife Service	SMP = sand management plan
FWCA = Fish and Wildlife Coordination Act	SAS-SE = Special Assistant to the Secretary of the Interior - Southeast

**1960 - 1969**

- 04/17/63** The Committee on Public Works of the U. S. Senate adopts a resolution to initiate a study of the Manteo (Shallowbag) Bay Project. A similar resolution by the Committee on Public Works of the U. S. House of Representatives was adopted on September 26, 1963.
- 09/12/66** The COE notifies the FWS about the proposal to stabilize Oregon Inlet with jetties and enlarge navigation channels from the inlet to Shallowbag Bay at Manteo. The channel depth of the ocean bar at the inlet would be increased from 14 to 20 feet deep, but channel width would remain 400 feet. The COE solicits comments from the FWS.
- 11/29/66** The FWS Regional Director provides an initial opinion of the project to the COE. He states that project related damage to fish and wildlife resources would be “slight” in the immediate area of existing channels and spoil areas, but expresses concern about the creation or expansion of dredge disposal areas.
- 02/29/68** The COE releases a Review Report for the project. The COE recommends stabilizing Oregon Inlet with a dual jetty system, implementing a means of sand bypassing, creating an ocean bar channel 20 feet deep by 400 feet wide. The initial cost would be \$10.79 million and annual maintenance costs would be \$260,200. The report notes that the “transfer of sand across Oregon Inlet to alleviate downdrift beach starvation resulting from the barrier effect of the jetties could reduce the present rate of beach erosion along the section south of and affected by Oregon Inlet.”
- 04/30/69** The Chief of Engineers submits the COE report to Congress. The COE recommends deepening the ocean bar channel from 14 to 20 feet, stabilizing Oregon Inlet with jetties, a “means” for bypassing sand across the inlet, and creating a 15-acre basin at Wanchese Harbor. The estimated first cost is \$11,177,000 with annual costs of \$718,000. The benefit-cost ratio is estimated to be 1.4 to 1.

**1970 - 1975**

- 12/31/70** The Manteo (Shallowbag) Bay Project is authorized by the River and Harbor Act of 1970, Public Law 91-611. The only reference to the project is in section 101 where Congress adopted and authorized “Manteo (Shallowbag) Bay North Carolina: House Document Number 91-303 at an estimated cost of \$10,769,000.00.” House Document 91-303 consists of a general description of the proposed project, comments by other agencies, both state and Federal, and the Report of the Chief of Engineers. Final project specifications are not provided. The amount of land needed from CHNS and PINWR for construction is not specified. A transfer of jurisdiction of land from the NPS and FWS to the COE is not indicated. The authorized project includes a

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stipulation that a non-Federal body would develop, operate, and maintain an expanded harbor at Wanchese on Roanoke Island.

**1971** The State and Dare County initiate the acquisition of land for the Wanchese Harbor expansion.

**1975** Funds are appropriated to begin advanced engineering and design work on the inlet stabilization project by the COE.

### **1976**

**10/14/76** The COE issues a PN on availability of the Draft EIS for the expansion of Wanchese Harbor.

**11/08/76** The FWS recommends to the COE that harbor expansion at Wanchese be held in abeyance until an EIS for the entire project is completed.

**12/20/76** The FWS (Raleigh Field Office) provides DOI comments to the COE on the PN for harbor expansion at Wanchese. Harbor expansion would destroy approximately 50 acres of salt marsh, and the FWS recommends measures to minimize loss of wetlands.

### **1977**

**03/77** The COE and NPS meet to discuss the project. The NPS identifies the need for the COE to have a Special Use Permit to construct the jetties (Gourash 1983).

**04/13/77** The FWS (Raleigh Field Office) writes the COE to suggest a meeting with the NMFS and EPA to discuss the entire project, specifically the stabilization of Oregon Inlet. The FWS wants to know if FWS recommendations have been incorporated into project plans.

**04/15/77** The COE releases drafts of the Phase I GDM and Draft EIS for entire project. These documents support the basic plan authorized by Congress in 1970. Sand bypassing would be accomplished by the continuous operation of a drag scraper assembly and seasonal use of a hydraulic dredging plant.

**04/29/77** The COE announces availability of the Final EIS for harbor development and creation of the Seafood Industrial Park at Wanchese.

**5/19/77** The manager of PINWR (Williamson) provides FWS Regional Director with comments on the Draft EIS. Comments express serious doubts about the whole

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project and that the possible impact on the refuge is very great. The refuge manager questions whether the sand bypassing program will protect refuge beaches and is concerned about the lack of discussion on impacts to wetlands near Oregon Inlet. The manager notes that the entire refuge could be lost if erosion is not controlled.

- 06/17/77** DOI Regional Environmental Officer (Lee) provides the COE with comments on the Draft EIS and Phase I GDM for the project and notes that the principal issues involve jetty construction, wetland destruction, and impacts on larval drift. The proposed project would result in significant impacts on park lands and additional pressures on NPS operations at CHNS. DOI also notes that documents do not adequately address sand bypassing and that the project may impact DOI lands.
- 07/77** The COE releases the Phase 1 GDM - Plan Formulation.
- 08/19/77** The FWS (Raleigh Field Office) provides a draft mitigation plan to other resource agencies.
- 08/25/77** The COE issues a PN for proposed jetties, sand transfer facilities at Oregon Inlet, and harbor expansion at Wanchese. Construction of the Wanchese Harbor portion of the project is scheduled to begin in the spring of 1978.
- 09/20/77** The FWS (Raleigh Field Office) provides COE with comments on the PN. Comments state that the COE has not released a Final EIS and has not addressed the environmental concerns raised in the DOI letter of June 17, 1977. The FWS does not believe that the potential impacts of the project have been adequately addressed. The FWS advises the COE that any permit for construction of the project should be held in abeyance until DOI comments on the EIS have been addressed.

### 1978

- 1978** Congress passes Public Law 91-250 which states, in part, that the administration of NPS lands will not be done in any manner which derogates from the established purpose, except as may or shall be directly and specifically provided by Congress.
- 11/78** The FWS (Raleigh Field Office) sends draft mitigation plan to the COE and other resources agencies.
- 12/20/78** The COE writes FWS Assistant RD to provide operational right-of-way requirements for the jetties. The project would require 189 acres on PINWR and 144 acres on CHNS.

### 1979

- 04/06/79** The FWS provides the COE a second draft mitigation plan.
- 04/11/79** The FWS, NPS, and COE meet to discuss the project. The DOI agencies state that the COE may need right-of-way permits to build jetties. The DOI agencies express concern about potential jetty-induced erosion on barrier islands, particularly on PINWR. The COE tentatively agrees to prepare a supplement to the Final EIS to address project changes and previously unaddressed environmental concerns.
- 04/12/79** The COE releases the Final EIS. While a Final EIS was printed in July 1977, FWS records do not indicate that it was officially released. This document of April 1979, is apparently tied to the Draft EIS of April 15, 1977. The preferred alternative is construction of a dual jetty system and implementation of a sand bypassing scheme.
- 04/05/79** CEQ, DOI, and COE hold meetings to discuss project. Due to substantial inadequacies in the Final EIS, CEQ advises all parties that formal referral was not necessary. DOI decides to comment on the Final EIS.
- 05/02/79** The DOI meets with the COE to discuss the project. The COE is officially informed of the need for special use permits for construction on DOI lands. The COE agrees to prepare a supplement to the Final EIS.
- 05/04/79** The DOI notifies the COE that the FWS mitigation plan of April 6, 1979, should be used in the COE planning process.
- 05/23/79** The DOI Assistant Secretary Meierotto provides comments on the Final EIS to assist the COE in resolving DOI concerns in the forthcoming supplemental EIS. Comments include: (1) impacts on PINWR are not discussed; (2) the need for a section 7 consultation under the Endangered Species Act; and (3) alternatives are not adequately addressed. The DOI is concerned that stabilization work at Oregon Inlet could set a precedent for similar work at other inlets and encourage other types of shoreline stabilization in the region.
- 06/21/79** In a letter from the COE to the DOI responding to the Department's letter of May 23, 1979, the COE states that DOI comments would be addressed in a supplement to the Final EIS and that DOI input was needed.
- 07/79** The COE approves the Phase 1 GDM that was submitted in July 1977.
- 07/11/79** The COE sends a letter to the FWS advising FWS of the level of mitigation to be provided.

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- 07/12/79** The COE sends a letter to FWS RD Black giving right-of-way needs associated with the construction, operation, and maintenance of the jetty complex and requesting a Cooperative Use Agreement for placement of jetties on PINWR. The COE states that compensation for PINWR land lost to the project will be achieved by the build up of sand trapped by the south jetty.
- 08/03/79** The NPS initiates formation of a CAC which, at various times, consisted of four to eight coastal scientists and engineers. This group would be known as the Inman Panel or Inman Committee after the first chairman, Dr. Douglas Inman, a coastal oceanographer with the Scripps Oceanographic Institution. Dr. Inman states that the jetties would severely disrupt sand movement along the coast, sand would build up rapidly behind the jetties, and beaches on both sides of the inlet would be starved. The group meets several times in August.
- 08/29/79** The Inman Panel issues a “Report on the Potential Effects of the Proposed Oregon Inlet Jetties on Shore Processes Along the Outer Banks of North Carolina.” The report outlines the deficiencies in the COE proposal and concludes that the project would adversely effect the shoreline environment. The panel also concludes that over a 10-50 year period the jetties would be impossible to maintain without additional engineering (Gourash, 1983).
- 09/11/79** After touring the project area on August 30 ,with NPS personnel, DOI SAS-SE Wood writes the COE Division Engineer to express skepticism as to whether the project as presently planned will accomplish project objectives at costs commensurate with benefits claimed. The SAS-SE notes that conservation goals and philosophies have changed markedly since project authorization in 1970. DOI states that there is still an opportunity to consider appropriate changes in the project concept.
- 09/21/79** The COE distributes a draft Supplement to the Final EIS to Federal agencies, later designated as Supplement I. The purpose of the supplement is to discuss refinement of project features, correct errors in the earlier EIS, and address environmental concerns. Jetty construction is the only action alternative considered in the supplement.
- 12/03/79** DOI SAS-SE Wood provides comments to COE on draft Supplement to the Final EIS (September 1979) that state the DOI was not “in accord with the current project design.” The primary concerns of DOI are: (1) the jetties would accelerate already high rates of erosion near the inlet; (2) the jetties would alter normal longshore sand transport and likely cause “serious erosion problems well beyond the project area.”
- 12/20/79** The COE District Engineer Hight and DOI SAS-SE Wood meet to discuss report of the advisory committee. The COE makes assurances that the Phase II GDM will address the concerns expressed in the report. DOI SAS-SE Wood writes to DOI A/S-

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FW Herbst on December 27, stating that at the close of the meeting DOI and COE positions were further clarified, but virtually unchanged.

### 1980

- 01/08/80** State and Federal conservation agencies meet with the COE to develop a mitigation plan.
- 01/17/80** DOI A/S-FW Hales writes the COE to comment on the draft supplemental EIS and outline present concerns of the DOI to the project. The DOI notes 11 specific concerns that have not been resolved and informs the Corps that these issues must be resolved before any DOI permits can be issued. The letter concludes that the DOI response “. . . does not exclude the possibility of exercising its options for further action as provided for under the Council on Environmental Quality’s (CEQ) NEPA regulations (Ref: 40 CFR, Section 1504).”
- 01/24/80** The FWS (Raleigh Field Office) writes the COE expressing concern over the COE failure to accept the FWS mitigation plan.
- 03/03/80** The COE letter comments on FWS’s letter of January 24, 1980, and on the level of mitigation the COE can provide.
- 04/06/80** The CEQ, DOI, and COE hold meetings to resolve issues.
- 04/08/80** The FWS issues a “no jeopardy” Biological Opinion regarding the threatened loggerhead sea turtle and agrees that the project would not impact the arctic peregrine falcon, brown pelican, and bald eagle.
- 05/19/80** The FWS sends draft mitigation plan to the COE.
- 06/04/80** The COE and DOI A/S-FW Hales meet to discuss conflicting positions on the project. The DOI solicitor raises the possibility that the DOI may not have legal authority to grant the Special Use Permits which the COE would need to construct the jetties on DOI land.
- 06/10/80** The DOI Assistant Solicitor for Parks and Recreation Watts sends a memorandum to the Director NPS stating that the NPS and FWS should review the project in the context of the permit authorization procedures, applying the standards normally applied in such situations. If the project and mitigation are incompatible with the preservation and management of CHNS and PINWR as required by applicable authorities, notice should be given to the COE that the permits will be denied.

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- 07/07/80** The DOI Associate Solicitor for Conservation and Wildlife Widman sends a memorandum to Deputy A/S-FW stating that FWS has authority to issue rights-of-way if the project is compatible with refuge purposes, but none of NPS permitting authorities are applicable to the proposed project. The most appropriate mechanism for allowing unanticipated land uses with a unit of the national park system is explicit Congressional authorization.
- 07/08/80** The COE responds to the January 17, 1980, letter of A/S-FW Hales.
- 08/21/80** The FWS provides the COE with the final draft mitigation plan.
- 08/07/80** The CAC reconvenes and meets with the NPS and COE. CAC releases a second report entitled “Potential Effects of the Proposed Oregon Inlet Jetties on Shore Processes Along the Outer Banks of North Carolina.”
- 09/80** The COE releases the Phase II GDM - Project Design (Design Memorandum 2).
- 09/09/80** DOI A/S-FW Herbst informs ASA(CW) Blumenfeld that neither the NPS nor the FWS can make a finding that the jetties are consistent with the purpose for which land under their jurisdiction was established. The DOI must decline to issue permits for the jetties. The DOI remains opposed to the project. There is no need to refer to CEQ since DOI will not issue permits.
- 10/80** The COE releases a report on “Oregon Inlet Larval Transport Sensitivity Study.” The study provides results of physical model tests conducted by the Waterways Experiment Station on the potential of the jetties to block the passage of larval organisms through Oregon Inlet. The tests indicated that the jetties prevent some larvae from passing through the inlet to the sound.
- 10/06/80** The FWS completes an economic analysis (Starler Economics Report) of the project and determines that the project lacks feasibility.
- 10/14/80** The COE sends DOI the final version of a Supplement to the Final EIS, later designated as Supplement I. COE plans call for construction of the dual jetty system and implementation of a sand bypassing program. The COE notes the environmental concerns expressed in the reports of the CAC, but does not append these reports in the EIS “due to their length.” The COE states that the sediment budget within the immediate vicinity of Oregon Inlet will be enhanced by jetty construction and sand bypassing operations. The COE rejects the DOI prediction that additional construction would eventually be required to maintain the jetties.
- 10/24 80** The COE provides comments to the FWS on the final draft mitigation plan.

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- 12/03/80** The COE provides DOI with the Phase II GDM. The document provides revised details on the design and construction of the dual jetty system and a sand bypassing plan.
- 12/80** The CEQ, DOI, EPA, NMFS, and COE hold meeting to discuss the project. Due to substantial inadequacies in the EIS, CEQ advises all parties that formal referral was not necessary. The COE agrees to prepare a supplemental EIS.
- 12/28/80** DOI A/S-FW Herbst sends a memorandum to the DOI Secretary stating Departmental position on construction of the jetties. The DOI has serious environmental concerns regarding the jetties, e.g., accelerated beach erosion and blockage of larval fish passage, and doubts about the success of a COE sand bypassing program. DOI economic analyses indicate that jetties would not provide net benefits. The DOI supports a dredging alternative.
- 12/80** The DOI provides the COE with comments on the supplemental EIS and states opposition to the jetties alternative. The jetties are incompatible with PINWR and Congress must authorize the use of CHNS land.

### 1981

- 01/15/81** The FWS (Raleigh Field Office) submits final “Mitigation and Enhancement Plan Manteo (Shallowbag) Bay Project, Dare County, North Carolina” to COE.
- 04/29/81** The COE Director of Civil Works Heiberg meets with DOI Deputy A/S-FW Potter to discuss the project. DOI states that the new administration would review its position and if the project is in the nation’s best interest, the DOI will work with the COE to take the best course of action. Further discussions are planned at the Washington level to resolve the permit issue.
- 07/06/81** DOI Secretary Watt denies permits for the project and writes North Carolina Governor Hunt that this decision was based on a “tenuous” legal situation, i.e., the project is incompatible with use of NPS and USFWS lands, and project costs would be over the authorized ceiling. The DOI Secretary directs the FWS and NPS to work with the COE to develop an alternative to the jetties.
- 07/22/81** The COE, DOI Deputy A/S-FW Potter, Senator Jesse Helms, and the North Carolina Chamber of Commerce meet in Washington, D.C., to discuss the project. The parties agree that DOI would develop a dredging alternative and the COE would evaluate the dredging alternative. If dredging was feasible, the COE would proceed with

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development of that alternative. If the dredging alternative did not prove feasible, the COE should consult with the DOI for issue resolution.

- 08/05/81** DOI A/S-FW Arnett writes ASA(CW) Gianelli requesting that the Corps thoroughly review a dredging option incorporating nearshore dumping for sand bypass as an alternative to jetty construction.
- 08/26/81** The DOI submits a dredging plan for maintaining the Oregon Inlet channel to ASA(CW) Gianelli. The plan calls for channel development and maintenance by dredging alone and the deposition of dredged material by commercial hopper dredges in the nearshore zone so the littoral drift could move the sand onshore and mitigate erosion.
- 09/28/81** ASA(CW) Gianelli responds that the COE would “analyze” the proposed dredging alternative but would not undertake an experimental dredging program. The COE requests that if their analysis finds the dredging plan to be technically unfeasible or ineffective, the DOI is expected to take expeditious action to permit jetty construction.
- 11/81** DOI A/S-FW Arnett denies the COE proposal.
- 11/24/81** ASA(CW) Gianelli writes DOI A/S-FW Arnett requesting a decision on the COE request for permits to use FWS lands and the transfer of jurisdiction of lands from the NPS.
- 12/17/81** DOI A/S-FW Arnett writes ASA(CW) Gianelli to discuss the unresolved issues surrounding the ability of the DOI to issue permits for jetties. DOI solicitors are studying the issues involved with jetty construction. DOI requests that the COE examine the feasibility of the dredging alternative, and that the analysis of a dredge-only alternative be completed before the COE “pursues further” the option of jetty construction.
- 12/22/81** The ASA(CW) authorizes the COE to undertake a comprehensive evaluation of the dredge/disposal method recommended by the DOI.
- 1982**
- 01/28/82** The manager of PINWR determines that jetties are not compatible with the purposes for which the refuge was established.
- 03/82** The Oregon Inlet Technical Observation Committee (OITOC) is organized to work on a dredging alternative to the proposed jetties.

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- 04/15/82** The OITOC meets to review the computer models that the COE would use to evaluate the DOI dredging solution. The DOI members were concerned that they had no input into the formulation of the models and that the dredging solution would be held to a higher success criterion (maintain a 20-foot channel all year) than that expected from the jetties.
- 04/16/82** Chairman of the OITOC, G. J. Gogue of the NPS, writes to DOI A/S-FW expressing concerns about the COE models to be used in evaluating the dredging alternative. There is also concern that the Wilmington COE District has assumed responsibility for interpreting the results of the various computer models. Since the COE has been an advocate for jetty construction, this role in the evaluate process places the COE in “an awkward position to objectively evaluate the dredging alternative.” The OITOC had no input into the parameters being evaluated in the two computer models.
- 05/11/82** The COE holds a scoping meeting in Wilmington, NC and announces their intention to prepare a second supplement to the Final EIS in order to evaluate the dredge-only option of the DOI and to design changes for the jetties.
- 05/28/82** FWS RD Pulliam issues a determination which states “. . . the proposed project is not compatible with the purpose for which PINWR was established.” The primary reason for this finding is that the project would “. . . create conditions that will significantly alter the refuge environment, resulting in deterioration or elimination of wildlife habitat, and certain wildlife related public use.”
- 06/01/82** DOI A/S-FW Arnett writes ASA(CW) Gianelli to provide the conclusions of the OITOC. The DOI finds that COE models for evaluating dredging are not state-of-the-art; the models are not suitable for verification under field conditions; there are significant errors in the predictive capability of the models; the models demonstrate responses to wave conditions that are known to be opposite to those observed on natural beaches; the models and analysis ignore important ocean processes; and the COE demanded a greater degree of reliability in predicting the success of dredging than that required for the jetties. The OITOC concludes that the COE models would be unsatisfactory and insufficient for fair evaluation of the dredging alternative.
- 06/02/82** DOI A/S-FW Arnett informs Congressman Walter B. Jones and Senators Helms and East that the FWS has determined that jetty construction at Oregon Inlet would not be compatible with the purpose for which PINWR was established, and a permit could not be issued for use of refuge land for jetty construction and operation.
- 06/09/82** Ken Hunter, a private citizen and freelance writer, sends a letter to ASA (CW) Gianelli which presents errors in the COE cost-benefit analysis and requests a reanalysis of the economic justification for the jetties and a reevaluation of the dredging alternative.

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- 06/14/82** The FWS (Asheville Area Office) accepts offer by the COE to become a cooperating agency in preparing future NEPA documents.
- 08/19/82** The COE writes the DOI stating that COE technical experts disagree with the OITOC conclusions and presents arguments for accepting the COE model results.
- 09/02/82** DOI Deputy A/S-FW Potter writes ASA(CW) Gianelli stating that the dredging alternative appears feasible and that a meeting should be held to resolve outstanding differences.

### 1983

- 04/01/83** The COE releases a final report entitled “Feasibility Study, Dredging/Near-Shore Disposal Plan, Oregon Inlet, North Carolina.” Major findings are: (1) the desired channel could be maintained by dredging under average wave conditions; and (2) the limited movement of sand to the beaches would create severe beach erosion. The report concludes that the DOI dredging plan is “functionally infeasible” because it would produce “catastrophic and unacceptable” beach erosion. The study recommends that no further consideration be given to the dredging/nearshore-disposal plan.
- 04/21/83** A meeting is held with DOI Secretary Watt, ASA(CW) Gianelli, NC Governor Hunt, U. S. Senators Helms and East, and U. S. Representative Jones. Secretary Watt reiterates that the DOI was unable to issue special use permits for jetty construction on DOI land.
- 06/14/83** Legislation is introduced in the U.S. Congress (H.R. 3288 and S. 1471) to authorize the transfer of land from the DOI to the COE for construction of the project. Neither bill passes.

### 1984

- 02/84** The COE releases a second economic reanalysis which addresses errors identified in the 1977 analysis and includes a range of benefits and benefit-cost ratios.
- 08/13/84** The COE issues a draft Supplement II to the Final EIS to respond to “developments” that could influence the preferred alternative. The COE notes that dredging with nearshore disposal has been evaluated and was predicted to cause “catastrophic beach erosion along Pea Island.” Therefore, this alternative has been found unacceptable. The preferred alternative is the dual jetty system with design modifications.

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**11/14/84** DOI comments on the draft Supplement to the Final EIS note that: (1) the dredging alternative is not adequately addressed; (2) the project would accelerate erosion on Pea Island NWR; and, (3) the project may be referred to the Council on Environmental Quality.

**12/05/84** The Federal Office of Management and Budget (OMB) releases a letter critical of the COE new economic analysis. The OMB informs the COE that project costs will substantially exceed its benefits and expressed concern regarding the potential for significant adverse environmental impacts which could add to the total project costs. OMB requests an independent analysis by a private company.

### 1985

**05/85** The COE issues the final version of Supplement II to the Final EIS. The COE notes that the dredging/nearshore disposal alternative has been found unacceptable. The COE presents design changes to the jetties. New economic evaluations indicate that the jetties are economically feasible. The jetties are the preferred plan of the COE. The authority to place the jetties on DOI land is an unresolved issue.

**08/85** The CEQ, DOI, NMFS, EPA, and COE hold meetings to discuss the project. The COE first grants several extensions and later a long-term extension to resolve differences. However, DOI decides to comment on the Supplemental Final EIS.

**08/14/85** DOI comments on the Final Supplement to the Final EIS. The comments state that jetty construction would result in accelerated erosion and barrier island overwash near the project. The DOI remains unconvinced that a sand bypassing system of the magnitude required is feasible at Oregon Inlet. The DOI is concerned that a thorough, impartial reexamination of the dredging alternative has not been conducted over a sufficient period. The DOI cannot administratively authorize use of DOI lands for construction of the jetties. Overall, the DOI is still opposed to the jetties and supports a dredge-only alternative.

**10/85** CAC releases Report No. 3 on inlet dynamics and reevaluation of the COE sediment budget for Oregon Inlet.

### 1986

**01/22/86** The FWS presents environmental concerns about the jetties at the COE-DOI Oregon Inlet Technical Meeting in Atlanta, Georgia. These concerns include the risk of erosion on Pea Island, unknown impacts on larval transport and distribution, and the lack of compensatory mitigation for wetlands lost at Wanchese Harbor.

**1987**

- 07/87** The Kearney/Centaur Company releases “A Reassessment of the Economic Feasibility of the Oregon Inlet Project.” This comprehensive evaluation of project economics by a private company concludes that benefit-cost ratios would range from 0.81 to 0.93, i.e., project costs would exceed benefits.
- 12/87** The NPS releases a report by the CAC entitled “Discussion of the U. S. Army Corps of Engineers Proposed Manteo (Shallowbag) Bay Project - The Stabilization of Oregon Inlet North Carolina.” The 82-page report reiterates concerns about: (1) the ability to maintain the sediment budget after jetty construction; (2) the effects of jetties on shoreline erosion and accretion; (3) COE rejection of the role of barrier island migration on the Outer Banks; (4) failure of the COE to fully consider the role of future sea level rise in project planning; and, (5) failure of the COE to give a dredge-only alternative a fair and unbiased assessment.

**1988**

- 04/88** The State of North Carolina submits a report rebutting the economic analysis done by Kearney/Centaur.
- 05/88** The DOI Secretary writes Senator Helms and Governor Martin that the FWS has determined that the jetties are incompatible with the purpose for which PINWR was established.
- 07/88** Dr. Robert Dolan and John Fisher submit an “Assessment of Dredge Only Alternative, Oregon Inlet, North Carolina” to the NPS. The report recommends a 2 year demonstration project of a dredging alternative. It notes that the dredging alternative is highly flexible and would allow sands to be placed where needed to provide maximum benefits and suggests that a dredging alternative could be less expensive than the proposed jetty option.

**1989**

- 03/31/89** The NCDOT applies for a Special Use Permit from the FWS to construct a “terminal groin” and revetment on the north end of PINWR in order to protect Bonner Bridge over the inlet.
- 06/20/89** The FWS issues a right-of-way permit for construction of the “terminal groin” and revetment on the refuge. Two days later the COE issues permits for construction.

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- 10/89** The COE begins construction of a “terminal groin” to reduce erosion at the north end of Pea Island and protect Bonner Bridge. The COE designs the 3,125-foot groin with the same dimensions and same location as the landward section of the proposed south jetty.
- 1990**
- 07/90** The COE releases its third economic analysis of the project, entitled “1990 Update of 1984 Economic Analysis.” This report shows lower initial construction costs due to the separate construction of the “terminal groin.”
- 07/90** The COE develops a Scope of Work for the FDM, Sand Bypassing System.
- 08/02/90** NC Governor Martin visits DOI Secretary Lujan to ask for support in building a dual jetty system. Later in the month the Secretary writes the Governor and states “I continue to believe that timely and judicious dredging will allow safe passage through the inlet while the environment remains protected.” The DOI Secretary offers to work with the COE to study the environmental effects of the terminal groin. The results of this study would allow the DOI to more accurately predict the impact of the proposed jetty project.
- 10/31/90** DOI Secretary Lujan writes North Carolina Governor Martin that the FWS and NPS will participate in new design planning for the jetties project. DOI participation is intended to increase DOI understanding of the project and increase DOI efficiency in communicating its concerns to the COE. The ultimate DOI decision on the project will be based on: (1) the determination of the DOI Solicitor on the compatibility and legality of building jetties on park and refuge land; (2) the determination by the Office of Management and Budget on the current cost-benefit ratio of the project; and, (3) an assessment by the DOI of the environmental consequences of the project.
- 11/02/90** The COE invites the FWS and NPS to participate on a Technical Committee on the Oregon Inlet project.
- 11/21/90** As a result of a meeting with CEQ and OMB, DOI A/S-FW sends a memorandum to the FWS and NPS that sets the criteria for approval of the jetties project as: (1) approval by OMB; (2) the project is legal and compatible; and, (3) project impacts are assessed. The DOI will make an independent evaluation.
- 11/29/90** The Oregon Inlet Design Team of the COE and DOI hold an organizational meeting.
- 12/90** The DOI Secretary sends a letter to the Secretary of the Army regarding the criteria for DOI approval of the project (same as those given in letter of 10/31/90).

**1991**

- 01/91** A joint COE/DOI Oregon Inlet Technical Design Committee is formed to develop an acceptable sand bypassing plan.
- 01/18/91** The FWS sends a letter to the COE which outlines issues to be addressed in Supplement III to the FEIS.
- 03/91** Construction of the “terminal groin” on PINWR is completed.
- 10/07/91** A Larval Transport Workshop is held in Raleigh, NC to discuss issues surrounding the ability of larval fish to pass through Oregon Inlet with a dual jetty system. General conclusions are that definitive predictions on blockage of larval fish passage cannot be made without resolution of some critical hydrological issues. However, potential impacts range from minor to highly significant.
- 12/31/91** The OITDC releases a report on their year-long evaluations, “Report to: The Secretary of the Interior and the Assistant Secretary of the Army (Civil Works), The U. S. Army Corps of Engineers Plan to Stabilize Oregon Inlet”. The DOI representatives release a separate report, also dated December 31, to the DOI Secretary that concludes the jetties would have “significant and unavoidable large-scale impacts on the inlet and the adjacent barrier islands.”

**1992**

- 03/25/92** The DOI (Raleigh Field Office) and COE (Wilmington District) meet to discuss future planning for the project and revised EIS planned by COE. COE discusses plans to develop a revised SMP. The FWS states that a Special Use Permit could be issued 30 days after Final EIS.
- 10/28/92** DOI Secretary Lujan issues two conditional permits to the COE for use of DOI lands for jetty construction, contingent on completion of project plans and environmental studies.

**1993**

- 01/28/93** U.S. Senator Helms (R-NC) introduces S. 192, a bill which requires the COE to carry out the construction and operation of the jetty and sand transfer system regardless of the final DOI final position. The bill also exempts the project from any permit requirements, including those issued by the DOI.
- 02/05/93** DOI Secretary Babbitt announces a decision to review the DOI previous approval of conditional permits allowing the use of DOI lands to construct jetties at Oregon Inlet.
- 06/15/93** DOI Secretary Babbitt rescinds conditional use permits allowing the COE to use DOI land for the construction of the jetties. The DOI states that a decision on permits would be made when additional environmental studies were completed.
- 09/22/93** An Issue Resolution Conference is held to provide an agency review of the draft Feature Design Memorandum (FDM) for the sand management plan.
- 10/01/93** The COE issues Project Guidance Memorandum.

**1994**

- 02/94** The Wilmington District submits a revised FDM on a SMP at Oregon Inlet to the COE South Atlantic Division. This FDM is not coordinated with DOI.
- 05/94** The Acting ASA (CW) directs the Wilmington District to coordinate the FDM with DOI.
- 10/94** The COE initiates coordination with DOI on the design of a SMP.
- 12/14/94** The FWS and DOI consultants (Robert Dolan and Robert Dean) meet with Wilmington COE personnel to discuss the design of a sand bypassing system.

**1995**

- 01/18/95** The COE, FWS, NPS, and DOI consultants meet to discuss FDM for the SMP. Agreement is reached that DOI can make early review of the SMP. COE also states that it is looking at fish catch projections since these are paramount to the project.
- 01/31/95** U. S. Representative Walter Jones introduces H. R. 758 entitled the “Oregon Inlet Protection Act of 1995.” The bill would require the COE to carry out construction and operation of the jetties and a sand transfer system. The bill would allow the COE to

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designate the land required for the project and notify the DOI Secretary of the designation.

- 02/95** The Southeast Regional Office of the NMFS informs the COE that “The assumption that even a modest increase in landings will be realized as a result of the project is unrealistic, based on the present condition of fisheries and the need to reduce harvests for a considerable period of time to rebuild depleted fishery stocks.” (Pilkey and Dixon 1996).
- 02/07/95** DOI consultants (Dr. Robert Dolan and Dr. Robert Dean) release a report entitled “Assessment of the U. S. Army Corps of Engineers FDM on Sand Bypassing for the Manteo (Shallowbag) Bay Project, Oregon Inlet, North Carolina.”
- 04/17/95** The FWS (Raleigh Field Office) writes the COE regarding the FDM for sand management at Oregon Inlet. The FWS remains very concerned about the future of the sand budget in the project area. The jetties may not eliminate the large historic, baseline erosion and a sand deficit could result. The FWS is also concerned about securing annual funding for sand bypassing, environmental monitoring, and any future mitigation. The FWS provides several specific recommendations for the FDM.
- 07/95** The COE releases the FDM for Sand Bypassing, the SMP.

### 1996

- 07/18/96** The Associate Director of the NPS Galvin, representing the DOI, testifies before a Congressional Subcommittee on S. 988, a bill directing the DOI to transfer administrative jurisdiction over certain land to the Secretary of the Army to facilitate construction of the jetties and a sand transfer system. The DOI opposed the bill due to the massive alteration such a project would cause in park and refuge land. The project would negatively impact fisheries resources. The COE ASA(CW) Lancaster testifies that additional studies must be made before construction could begin, and it would be premature for the COE to accept jurisdiction of the DOI land required for construction.

### 1997

- 1997** The COE completes work on its fourth economic analysis of the project. The FWS is informally told that this work revealed that a sizable portion of the fish landed at Wanchese Harbor come from boats using Hatteras Inlet, not Oregon Inlet. As a result of this analysis, project benefits will be based on increased fishing efficiencies, rather than increased fish landings.

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- 09/19/97** The COE informs the FWS (Raleigh Field Office) that project plans may be revised and that the Draft FWCA Report originally due by September 30, will need to be delayed until new plans are developed.
- 11/12/97** The COE briefs the FWS on two new designs for the dual jetty system. Plan 2 and 3 would reduce the seaward end of each jetty by 1,000 feet. Plan 3 would have a 1,000 foot weir section in the northern jetty. The original plan was retained as Plan 1.
- 12/12/97** The FWS (Raleigh Field Office) receives a brief written description of three alternatives and notices that Plan 3 (shorter jetties with a weir in the north jetty) is the preferred alternative.

### 1998

- 01/30/98** The FWS Southeast RD Hamilton holds a meeting in Atlanta with a representative of the NPS to formulate a position on the jetty proposal. The consensus of the meeting is that the FWS will oppose the stabilization of Oregon Inlet with hard structures, such as the dual jetty system.
- 03/27/98** The FWS Southeast RD Hamilton writes the COE that the FWS opposes the stabilization of Oregon Inlet by means of hard structures, such as the proposed dual jetty system.
- 05/11/98** The FWS releases a Draft FWCA Report on the project that summaries the environmental concerns. The FWS recommends that project goals should be achieved by a dredging alternative and that the jetty alternative be eliminated.

### 1999

- 01/04/99** The COE releases drafts of the GDM (Supplement No. 2) and the Final EIS (Supplement No. III) for the project. The preferred alternative is construction of the dual jetty system and implementation of a sand management plan. The new jetty design has shortened each jetty by approximately 1,000 feet; eliminated the sand blocking, central barrier within each jetty; and added a 1,000 weir section in the north jetty over which sand is expected to move into a 60-acre sediment deposition basin.
- 03/04/99** The NMFS sends comments to the COE on the January 1999, documents and states “the potential for significant and adverse long-term impacts to nationally important living marine resources is such that the NMFS has no recourse, but to recommend that the jetties not be built.”

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- 03/22/99** The DOI sends comments to the COE on the January 1999 documents. These comments note deficiencies in the Supplemental EIS and reiterate the position given in the May 1998 FWCA Report that project goals could and should be met with a dredging program rather than the dual jetty system. The comments state that the DOI would consider referring the jetty alternative to the CEQ.
- 05/14/99** The FWS (Raleigh Field Office) releases a BO on the COE proposed dual jetty system. The BO states that the project was not likely to jeopardize the continued existence of sea turtles or the piping plover. While incidental take was given for sea turtles, no incidental take was given for known piping plover nests in the project area.
- 08/22/99** Dr. Richard T. Selden (Carter Glass Professor of Economics Emeritus) at the University of Virginia, Charlottesville) presents his analysis of the COE benefit-cost analysis to the USFWS's Raleigh Field Office and personnel from the CHNS. Dr. Selden identified many instances where the COE appears to have either inflated benefits associated with the jetties or understated costs. His analysis concludes that a conservative revision of the COE data turned a predicted \$36.9 million net benefit over 50 years to a net loss of \$4.9 million. Overall, the project did not have the required benefit-cost ratio greater than one.

### **2000**

- 03/00** The Taxpayers for Common Sense and the National Wildlife Federation release a report, Troubled Waters, that describes the environmentally harmful and financially wasteful projects under consideration by the COE. Among the 10 worst projects in the country, the Oregon Inlet jetties project is listed fifth.
- 05/09/00** U. S. Senator Jesse Helms attaches a rider ( the Oregon Inlet, North Carolina, Flood Control Improvements) to the FY 2001 Agriculture Appropriations Bill that calls for the transfer of land to build the jetties from the jurisdiction of DOI to the COE.
- 07/00** Senator Helms' land transfer amendment in the Agricultural Appropriation Bill is replaced by a provision requiring the Secretary of the Army to conduct a restudy of the Oregon Inlet navigation project. The land transfer amendment is placed in the Interior Appropriations Bill, but is also removed from the final bill. The restudy is subsequently dropped before final passage.
- 12/01/00** Senators John Edwards (D-NC) and Max Baucus (D-MT) request that the GAO review the COE plans for the Oregon Inlet project.

### **2001**

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- 05/19/01** The COE requests reinitiation of formal consultation under section 7 of the Endangered Species Act for impacts to proposed critical habitat for overwintering piping plovers in the area surrounding Oregon Inlet.
- 07/12/01** The FWS (Raleigh Field Office) provides the COE with a Final FWCA report for the project. The report reiterates the two major recommendations of the Draft FWCA of May 1998: (1) the COE should abandon plans for a dual jetty system due the magnitude and extend of environmental consequences; and (2) the COE should develop a conventional dredging program to achieve project goals.
- 07/27/01** The FWS (Raleigh Field Office) provides the COE with an amendment to the BO of May 1999. The amendment addresses impacts to critical habitat for overwintering plovers that was designated on July 10, 2001. The FWS determines that the proposed action is not likely to adversely modify designated critical habitat and that the level of incidental take that would occur from the project would not exceed that which was anticipated to occur in the May 1999 Biological Opinion.
- 07/31/01** Personnel of the FWS and NPS brief U. S. Representative Walter Jones and U. S. Senator Jesse Helms on their agencies actions in regard to the COE planning process.
- 09/01** The COE releases final versions of Supplement III to the Final EIS. The preferred alternative is construction of the dual jetty system and implementation of the SMP.

**References**

Gourash, D.F. 1983. The Manteo (Shallowbag) Bay project: a monument to the gods of engineering. Unpublished class report for: Public Policy 116, Duke University. Durham, NC.

Pilkey, O. H., Jr. and K. L. Dixon. 1996. The Corps and the Shore. Island Press. Washington, D.C. 272pp.